

en les battant avec un marteau, afin que la matiere suivante y tienne tant mieux. Celà fait, prenez de l'eau de vie forte, meslez y de la poudre à canon en farine, tant que tout soit en consistance d'une bouill & frottez en lez mesches avec un pinieceau, & espardez encor dessus, de la poudre en farine. Ainsi on laisse le tout secher & il sera preparé à l'usage.

VII. *An Account of a very large Eel, lately caught at Maldon in Essex; with some Considerations about the Generation of Eels, by Mr. Dale.*

TO meet with Accounts and Descriptions of very large *Congers* or *Sea-Eales*, is not a thing rare or uncommon, among the Writers of Natural History, and, among the rest, the Learned and most Ingenious Mr. John Ray, my very good Friend and Neighbour, in his *Ichthyographia*, pag. 11. describes it to be a very large Fish, in these Words, *Piscis est longissimus, quatuor vel quinque Cubitorum longitudinem non raro attingens, & semoris humani crassitiem æquans*. Consonant to which, Aldrovandus *Lib. de Pisc. P. 134.* saith, *Sæpe in quatuor aut quinque Cubitorum longitudinem excrescit*; and for Weight, *Salvianus* writes, *Non majores se vidisse quam triginta librarum*: Near to which Weight, Mr. Daniel, an Apothecary of Colchester, lately told me of one (if I mis-remember not) that amounted to 27 or 28 Pounds. But if we may believe what *Eudoxus* writes, some are of a prodigious Magnitude; for he in his

his Book *De Terræ Motu apud Athenium*, Lib. 6. saith, *Congros multos in Sicyone capi quos Homo vix ferat, horumque aliquos etiam esse plaustrales seu plaustri magnitudine.* And *Strabo*, Lib. 3. Geog. affirms, *in exterioribus locis augentur supra minarum octoginta*: whose Authorities I shall not contradict, altho' neither by the Observations of the Worthy Mr. *Ray*, nor any other Modern Author, can I find any to acquire near that Bigness.

Yet to find very large *Eels*, notwithstanding what is said both by *Pliny* and *Solinus*, of those found in the *Gauges* Thirty Foot long, is that which is rare and seldom (in *England* at least wise) to be found, and therefore having lately met with Relations of Two very large *Eels* caught upon the Coast of *Essex*, I thought the Communication thereof to the Curious, would not be altogether unacceptable.

These both had all the *Characterizing Notes* of the *Eel*, and wanted those *Barbles* which the *Eel* sometimes hath not, but the *Conger* is never without. The First was taken somewhere about *Cricksea*, and for its rarity was made a present of to a *Noble Peer* of this *Realm*: Its Length from Tip of the Nose to Tail's End, was Five Foot Eight Inches, and In Circumference it was Two and Twenty Inches; but as for the Weight, no Persons could inform me what it was, tho' perhaps it might not exceed Twenty Pound, of which *Aldrovandus* saith, that in *Italy* they come up to, but never exceed it. And for Length it agrees with those mentioned by *Rondeletius* to be sometimes caught in the Lake of *Latera*, which were Three or four Cubits long.

But

But those were far exceeded by one lately caught in *Malden* Channel, about a Mile below the Town, the length of which was Seven Foot, the Circumference Seven and Twenty Inches, the Weight Six and Thirty Pounds, and out of its Belly was taken Five Pounds of Fat, its Skin was Black, and being stuft, is still preserved at *Maldon*, for the Inspection of the Curious. This Fish was supposed to have been brought down thither by the Great Floods at the breaking of the last Frost, because of a Hurt it had on its Back, which the *Fisher-man* which caught it told me, he did conjecture it might be from some Mill it must pass through.

Had it been my good Fortune to have had the Knowledge of this monstrous *Eel* soon enough, I would have gone over to *Maldon*, to have seen it opened, it being a fit Subject in which to have examin'd the Parts of Generation, so much controverted, not only by the Ancient, but also by Modern Authors, and thereby been in some measure capacitated to have satisfied my self concerning that no less controverted Point, the Manner of their Generation.

Many there are, that with *Aristotle*, will have the Generation of *Eels* to be *Spontaneous* or *Equivocal*, and will not allow them the Distinction of Sex; the Difficulty how *Eels* should come to be in any Pool, Pond, Mote or Ditch, in which never any were put, they are not able to surmount, and therefore have vainly imagined them either to be produced from Mud, or from a peculiar Sort of *Dew*, falling in *May* or *June*, upon the Blades of the Grass, whereof Turfs being cut, and the Grassy Sides being together, and then
laid

laid on the warmest Side of a well promising Pool or Pond, the Sun's Heat will thence hatch them; of which Original *Myllius*, in his Treatise *de Origine Animalium*, lib. 10. and *Morbofius de Metallorum transmutatione*, p. 38, 39. seem so well satisfied, that they give the Process of this Affair, as practised by the *Dutch*, successfully to stock their Fish-ponds with that sort of Fish.

That the Generation of any Animal cannot be *Equivocal* or *Spontaneous*, but from Animal Parents, hath been so well, by many undeniable Arguments asserted, and by multiplied Experiments confirmed, by those famous and celebrated *Virtuosi*, *Malpighius*, *Redi*, *Swammerdam*, *Leewenhoek*, *Mr. Ray*, and others, in their several learned and ingenious Tracts and Observations on that Subject, that I think there is no room left in the least to doubt but that *Eels* have the same Original. And if we may credit what the ingenious *Dr. Plot*, in his *Natural History of Staffordshire*, p. 243. writes, concerning the Night Travels of *Eels* observed near *Bilston* in that County, by *Mr. Mosely*, the Way of their stocking Ponds, &c. may not be altogether so improbable neither, as at first it may be thought to be, if we but consider how long they will live out of Water, and though I cannot with *Pliny*, in his *Natural History*, Lib. 9. Cap. 21. allow the time to be Six Days, yet I am sure it may be long enough, to travel over a few short Meadows, or from one Ditch or Pond to another, which may be performed in much less time than that of one Night; and if we may believe what *Gesner* in his Book of Fishes, lib. 4. cap. de *Anguilla*, quotes from *Albertus*, of a Parcel of *Eels*, which in a very cold Winter, Anno 1125. not only left their Na-

tural Element, but were found in a dry Meadow, bedded together in a *Hay-stack*, the thing will seem more probable, to which let me add the Form and Shape of their Bodies, which by its *undulate* or *Serpentine* Motion is adapted to travel *in arido*: Neither are Eels the only Fish, which by Authors are affirmed to live *in Sicco*, but the *Exocetus* also mentioned by *Rondeletius*, with others so considerable for their Number, that *Theophrastus Eresius* wrote a Book of them, which was afterwards Commented upon by *Aurelius Severinus*, in a Book entituled *De Piscibus in sicco viventibus*, Printed at *Naples*, Anno 1655. Not to mention the *Cerian* and *Paphlagonian* Fishes, affirmed by *Aristotle* to wander up and down on the dry Sands, and then return back to Sea again, the like is also asserted of those of the River *Cherati*, in *Judæa*, by *Geo. Picorius*. All which, *Rondeletius* thinks *Eels*, as well as the aforesaid Fishes, perform by the *Rima* of their *Gills*, being narrow and thereby capacitated to oppose the free, and too sudden Appulses of the Air.

Neither doth the Controversy here terminate, for even among those learned Persons which oppose an *Equivocal* or *Spontaneous* Generation, the Dispute is, Whether *Eels* have distinct *Sex*, or are *Hermaphrodites*. By some a distinct *Sex* is allowed them, for Mr. *Allen*, in his Account of the Generation of Eels, Published in the *Philosophical Transactions*, Numb. 231. affirms the Parts distinguishing the Sex to be discoverable, and in this *Rondeletius* is positive, when he affirms, *Anguillas mutuo corporum complexu coeuntes se vidisse neque putare se partibus ad gignendum necessariis prorsus destitutas esse, inferiore enim ventris parte, & Vulva in Fæminis & semen in Maribus reperitur: sed pinguidine*

pinguidine multa circumfusa hæ partes non apparent : And from hence, I mean from the parts of Generation being hid in Fat, might arise that mistake in *Aristotle*, which did occasion him so positively to affirm, *Anguilam neque marem esse neque fæminam*. And though it cannot but be granted; that that ingenious Inspector of Nature, Mr. *Lewenhoek*, hath, by the Help of his Glasses (which are very good ones) made many curious Discoveries in Animals and their Parts of Generation, yet never (to use his own Words) had he found a *Male Eel* that he could call so; for all those that he did Distill, as in his Letter Published in the *Philosophical Transactions*, Numb. 221. he declares were provided with an *Uterus*, from whence he doth conjecture Eels to be *Hermaphrodites*, and besides the *Uterus* to be provided with *Masculine Seed*.

Another great Controversy about the Generation of Eels is, whether they are *Oviparous* or *Viviparous*, and many ingenious Persons I find there are, which cannot consent to an *Equivocal* or *Spontaneous* Generation, but strenuously oppose the same, yet firmly believe them to be *Oviparous*, whose Sentiments are contrary to the Observations of *Walter Chartwynd*, Esq; who in the Month of *May*, found them to be *Viviparous*, by cutting open the red Fundaments of the Females, from whence the Young *Eels* would issue forth alive: And although Mr. *Allen* affirms them to be certainly *Viviparous* yet his Observations concerning the Place of their Conception, I cannot conceive to be consonant to that Care and Industry of Nature, in providing convenient *Receptacles* for preserving the *Fetus*, neither is it agreeable to Reason, to believe, that when Nature hath provided a *Uterus* in all Animals, not only the *Vivipa-*

rous, and such as only cherish the *Embryo in Utero*, but in the *Oviparous* also, and *Insects*, the *Eel* and *Xiphia* or *Sword-Fish*, mentioned by *Bartholinus Cent. 2. H. 16. Anno 1654.* should be the only Animals without it, much less that the *Guts*, appointed by Nature for the *Secretion* of Nourishment, and the Expulsion of the *Fæces*, and are always in Motion, should be the Place of Generation in any Animal; though we may allow Eels not to feed Gross in the Winter. On the contrary, that the *Eel* hath an *Uterus*, is asserted by Mr. *Leewenboeck*, who never found them without; which perhaps is that part which Mr. *Allen* names a slender Gland, transversely lying near the Bowel.

Besides, Nature having in all Animals, *Oviparous*, as well as *Viviparous* hitherto dissected, provided not only an *Uterus*, but also *Tubes* (first observed by *Fallopian*) for the conveying the *Ovum* from the *Ovaria* to the *Uterus*. Another great Difficulty and Objection that lieth against Mr. *Allen's* Observations, and in which indeed he seems to contradict himself, is this, whereas he saith that in one *Eel* he found *Eggs*, and those on the out side of the *Intestine*; but in the other, Six Young ones, each fastened to a small *Placenta*, and those within the great *Intestine*, called, the *Strait Bowel*, which adjoyns immediately to the *Pylorus*: How and by what Passages those *Eggs* came into the *Intestine*, to be formed and invigorated, unless we may suppose they do, like the *Embryo's* of some sorts of *Insects*, which for the Conveniency of Food, eat their own Way into their *Heterogenious*, or assumed *Matrices*.

These

These Objections I have proposed to be considered only that I might excite that Ingenious Person to perfect his Discoveries, and by ocular Demonstrations to convince the Curious of the Truth and Certainty of his Observations, and finally to terminate this long continued Controversy, concerning the Generation of *Eels*, and after what manner their *Coitus* must be performed; the Parts of Generation in the *Male*, being by him affirmed, to be affixt to the Extremity of the *Kidney*, and the *Embrios* in the Female, (as is before observed) found in that Bowel which adjoyns to the *Pylorus*.
